

VIEWS & REVIEWS

REVIEW OF THE WEEK

Research misconduct revisited

What have we learnt about scientific misconduct? **Michael Fitzpatrick** reviews a two part documentary that puts the Andrew Wakefield vaccine debacle in a broader context

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Science Betrayed

A radio documentary by Adam Rutherford

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www.bbc.co.uk/programmes/b00znb98

Rating: ***

Because scientific research relies on trust, and misconduct is rare, mechanisms for detecting and dealing with it tend to be cumbersome and inefficient. In a two part Radio 4 documentary Adam Rutherford examines the controversy surrounding Andrew Wakefield, in the context of scientific scandals from the Piltdown man hoax of 1912 to the furore over the sacking of the Harvard animal behaviour researcher Marc Hauser in 2010. Rutherford examines the key roles of the relevant institutions and journals in two recent cases of scientific misconduct that were resolved briskly and efficiently. In the case of the Korean biotechnology researcher Hwang Woo-suk, the revelation that his claims for the therapeutic value of human embryonic stem cells published in *Science* in 2005 were based on fabricated data led to his prompt dismissal from his academic post at the Seoul National University (*BMJ* 2006;332:7, doi:10.1136/bmj.332.7532.7). When it was revealed that the South African oncologist Werner Bezwoda's claims for the spectacular success of a combination of high dose chemotherapy and autologous stem cell transplantation in advanced breast cancer were fraudulent in 2000, he was immediately fired by the University of Witwatersrand (*BMJ* 2000;320:398, doi:10.1136/bmj.320.7232.398/a).

In these cases the damage caused by scientific misconduct was limited by the fact that the perpetrators made early public admissions of their responsibility. The contrast with the combined measles, mumps, and rubella (MMR) vaccine and autism scandal is immediately apparent: in the "extended interview" provided by Andrew Wakefield for this programme, the "continuing lack of insight" into his conduct that so horrified the members of the General Medical Council's inquiry team is once again put on public display. In response to persistent questioning from Rutherford, Wakefield is incapable of

recognising the difference between disinterested scientific research pursuing a null hypothesis and research commissioned by a lawyer to produce findings congenial to the pursuit of litigation.

There are other substantial differences between the Wakefield case and other recent scandals. In an interview with Rutherford, *Nature's* editor, Philip Campbell, emphasises the key responsibility of coauthors to check data submitted for publication: they are in a position to detect fraud (and indeed error) in a way that peer reviewers cannot. It emerged at the GMC's inquiry that John Walker-Smith, the most senior of Wakefield's 12 coauthors, had not even read the final draft of the paper submitted to the *Lancet*. Wakefield's supervisor at the Royal Free, Roy Pounder—later shown by the investigative journalist Brian Deer to be engaged in commercial enterprises with Wakefield—failed to detect his misconduct.

When Deer presented evidence of Wakefield's misconduct to the *Lancet* in February 2004 the journal's editor collaborated with senior figures at the Royal Free in a cursory investigation. As the *BMJ's* editor in chief, Fiona Godlee, explains to Rutherford, the result of this failure by the responsible journal to pursue misconduct meant that it "joined with the authors in reassuring" the public that Wakefield's paper was based on sound science. The rigorous investigation by the GMC culminated six years later in the vindication of Deer and the disgrace of Wakefield and his collaborators.

Mark Pepys, head of the new University College London medical school consortium, tells Rutherford how in 2000 he called Wakefield's bluff, demanding that he produce some evidence for his hypothesis of an association between MMR vaccine and autism or quit. Notoriously he quit. Yet the public influence of Wakefield's allegations continued to grow, leading thousands of parents of children with autism in the United Kingdom and the United States into the futile pursuit of litigation and leading many more to refuse vaccination of their children. It is only now—13 years after the *Lancet* paper—that University College London is pursuing a formal inquiry into Wakefield's research (*BMJ* 2011;342:d2010, doi:10.1136/bmj.d2010). It is extraordinary to hear that Pepys considers that the college has

dealt “admirably” with this affair and that he remains “unrepentant” about the delay in the public exposure of Wakefield’s misconduct.

To answer the question of why it took so long for Wakefield to be exposed, we can return to Piltdown man. It took half a century for the truth that decayed bones discovered in a Sussex gravel pit were not those of a missing link between humans and apes but a combination of recent orang-utan and human remains. As the geneticist Steve Jones explains, this was because so many were “ready to be taken in”: they “wanted to believe” in Piltdown man because he seemed to confirm prevailing prejudices about human evolution. In a similar way many people—parents desperate for an explanation of their children’s difficulties, journalists eager for a story about a maverick scientist taking on the medical establishment, and, no doubt,

others with more venal motives—wanted to believe in Wakefield. Like the ill fated Walker-Smith, also struck off by the GMC, they “trusted Andy.” We have all paid a high price for this misplaced trust.

Competing interests: MF is author of *MMR and Autism: What Parents Need To Know*, Routledge, 2004.

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bmj.com Read Brian Deer’s three recent features on Wakefield and the MMR debacle (*BMJ* 2011;342:c5258, doi:10.1136/bmj.c5258; c5347, doi:10.1136/bmj.c5347; and c7001, doi:10.1136/bmj.c7001)

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